

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

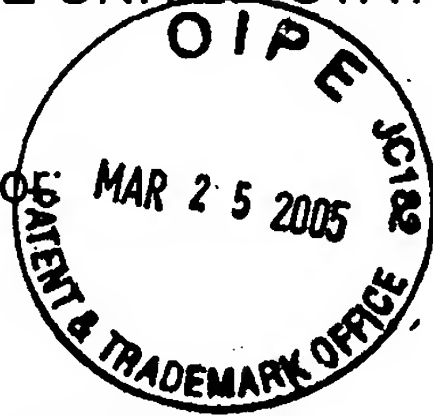
In re Application for:

Sondur

Application No.: 10/666,509

Filed: 9/19/03

For: WIRELESS SIGNAL PROCESSING  
METHODS AND APPARATUSES  
INCLUDING DIRECTIONS OF  
ARRIVAL ESTIMATION



CERTIFICATE OF MAILING

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INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. § 1.97(g), the submission of this Information Disclosure Statement (IDS) is not to be construed as a representation that a search has been made, and, pursuant to 37 C.F.R. § 1.97(h), the submission of this IDS is not to be construed as an admission that the information cited in this IDS is material to patentability.

03/28/2005 MBIZUNES 00000001 10666509

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180.00 DP

This IDS is being submitted under one or more of the following sections of 37

C.F.R. § 1.97 (as indicated by an "X" to the left of the appropriate paragraph(s)):

\_\_\_\_\_ 37 C.F.R. § 1.97(b). Filed:

- (1) Within three months of a National Application other than a CPA;
- (2) Within three months of entry into National Stage;
- (3) Before mailing of a first Office Action on the merits; or
- (4) Before mailing of a first Office Action after filing an RCE.

\_\_\_\_\_ 37 C.F.R. § 1.97(c). Filed before the mailing of a Final Office Action, Notice of Allowance, or an action that otherwise closes prosecution.  
And, ONE of the following:

(1) One statement from 37 C.F.R. § 1.97(e);

\_\_\_\_\_ (e)(1) The person signing below certifies that each item of information contained in this IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS; or

\_\_\_\_\_ (e)(2) The person signing below certifies that no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing below after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 1.56(c) more than three months prior to filing this IDS.

**OR**

(2) The fee set forth in 37 C.F.R. § 1.17(p).

\_\_\_\_\_ A check in the amount of \$180.00 is enclosed.

X 37 C.F.R. § 1.97(d). Filed on or before payment of the issue fee.

And, BOTH of the following:

(1) one statement from 37 C.F.R. § 1.97(e);

X (e)(1) The person signing below certifies that each item of information contained in this IDS was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS; or

\_\_\_\_\_ (e)(2) The person signing below certifies that no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing below after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 1.56(c) more than three months prior to filing this IDS.

**AND**

(2) The fee set forth in 37 C.F.R. § 1.17(p).

X A check in the amount of \$180.00 is enclosed.

Accompanying this IDS is a list of references and a copy of each reference listed therein, EXCEPT references pursuant to one or more of the following sections of 37 C.F.R. § 1.98 (as indicated by an "X" to the left of the appropriate paragraph(s)):

\_\_\_\_\_ 37 C.F.R. § 1.98(c) as being cumulative (marked with an "\*" on the Form PTO-1449).

\_\_\_\_\_ 37 C.F.R. § 1.98(d) as being previously submitted in parent application 09/908,118, to which the present application claims priority under 35 U.S.C. § 120.

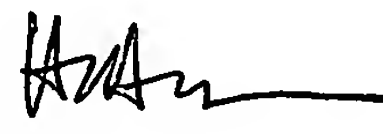
  X   Those U.S. Patent references waived from the requirement of 37 C.F.R. § 1.98 (a)(2)(i) .

The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393.

Respectfully submitted,  
SCHWABE, WILLIAMSON & WYATT, P.C.

Dated: March 22, 2005

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Approved for use through 07/31/2006. OMB 0651-0031

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Substitute for form 1449/PTO

**(Use as many sheets as necessary)**

Sheet	1	of	2
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**Complete if Known**

Application Number	10/666,509
Filing Date	9/19/03
First Named Inventor	Sondur
Art Unit	3662
Examiner Name	Mull Fred H.
Attorney Docket Number	111027-134390

## U. S. PATENT DOCUMENTS

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## FOREIGN PATENT DOCUMENTS

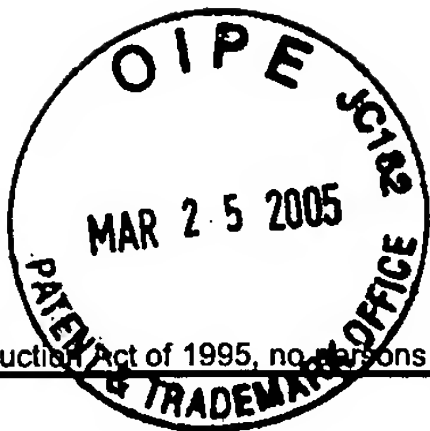
FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> ~Number <sup>4</sup> ~Kind Code <sup>5</sup> (if known)				
	2	EP 1 335 504 A2	8/13/03	Samsung		

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

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**Complete if Known**

Application Number	10/666,509
Filing Date	9/19/03
First Named Inventor	Sondur
Art Unit	3662
Examiner Name	Mull Fred H.
Attorney Docket Number	111027-134390

Sheet 2 of 2

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	3	McCarthy, Frank, "Multiple Signal Direction-Finding and Interference Reduction Techniques," ARGOSystems, Inc., Wescon/93 Technical Conference, 1993.	
	4	Hernandez, Marco, A., et al., "Subspace Based Estimation of Parameters and Linear Space-Time Multiuser Detection for WCDMA Systems, Delft University of Technology, IEEE 6th Int. Symp., 9/2000.	

Examiner  
SignatureDate  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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